

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Office Action dated May 29, 2009. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due reconsideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

As outlined above, claims 1-25 stand for consideration in this application, wherein claim 5 is being amended to correct a minor formal error. Any and all amendments to the application are fully supported therein. Applicants hereby submit that no new matter is being introduced into the application through the submission of this response.

Formality Rejection

Claim 5 was rejected under 35 U.S.C. §112, second paragraph, for being indefinite. As outlined above, claim 5 is being amended in accordance with the Examiner's requirements.

Prior Art Rejections

Claims 1-5, 7-16, and 18-24 were rejected under 35 U.S.C. §103(a) as being unpatentable over Albert et al. (U.S. Pat. No. 6,549,516 B1) in view of Official Notice. Claims 6 and 17 were rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Albert in view of Ashok et al. (U.S. Publication No. 2004/0003063 A1). Finally, claim 25 was rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Albert in view of what was well known in the art at the time the invention was made, and further in view of Ashok. Applicants respectfully traverse the above-outlined rejections for the reasons set forth below.

The present invention as recited in claim 1 is directed to an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, wherein the storage module further comprises a system configuration information retention database for retaining system configuration information including information about necessary configuration of each server module for execution of the service and the number of server modules to which the service is

to be assigned; wherein each of the server modules comprises a configuration information transmission unit for transmitting configuration information about each of the server modules to the storage module at the time of starting each of the server modules; and wherein the storage module compares the configuration information transmitted by the configuration information transmission units with the system configuration information retained by the system configuration information retention database, and gives, in accordance with results of comparison, a host name, which is unique to the information processing system, to at least one server module from which the configuration information is transmitted, assigns a service included in the system configuration information to the at least one server module, transmits data for executing the service included in the system configuration information, and updates the number of server modules to which the service, which is included in the system configuration information, is to be assigned.

As recited in claim 7, the present invention is directed to a server module which is connected via a network to a storage module, which comprises a storage device for storing a service to be executed by the server module and a controller for controlling the storage device, the server module comprising: a configuration information transmission unit for transmitting configuration information about the server module to the storage module when the server module starts up; a reception unit for receiving data for service execution by the server module and a host name unique to an information processing system which includes the server module, both the data and the host name being transmitted from the storage module; and a service start means for starting the service in accordance with the received data.

The present invention as recited in claim 8 is directed to a storage module which is connected to a plurality of server modules via a network and equipped with a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, the storage module comprising: a system configuration information retention unit for retaining system configuration information including information about necessary configuration of each server module for execution of the service and the number of server modules to which the service is to be assigned, wherein each of the server modules comprises a configuration information transmission unit for transmitting configuration information about each of the server modules to the storage module at the time of starting each of the server modules; and wherein the storage module further comprises a comparison means for comparing configuration information about the server modules, which is transmitted by the server modules, and the system configuration information retained by the system configuration information retention unit, and gives, in accordance with results of comparison

made by the comparison means, a host name, which is unique to the information processing system, to at least one server module from which the configuration information is transmitted, assigns a service included in the system configuration information to the at least one server module, transmits data for executing the service included in the system configuration information, and updates the number of server modules to which the service, which is included in the system configuration information, is to be assigned.

As recited in claim 9, the present invention is directed to a system construction method for use in an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, the method comprising the steps of: with each of the server modules, transmitting configuration information about each of the server modules to the storage module at the time of starting each of the server modules; and with the storage module, comparing configuration information transmitted from the server modules with system configuration information including information about necessary configuration of each server module for execution of the service and the number of server modules to which the service is to be assigned; and giving, in accordance with results of the comparison, a host name, which is unique to the information processing system, to at least one server module from which the configuration information is transmitted, assigning a service included in the system configuration information to the at least one server module, transmitting data for executing the service included in the system configuration information, and updating the number of server modules to which the service, which is included in the system configuration information, is to be assigned.

Further, as recited in claim 12, the present invention is directed to an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, wherein the storage module further comprises a system configuration information retention unit for retaining system configuration information including information about necessary configuration conditions for each server module for execution of the service and the number of server modules operating the service; and a configuration condition request transmission means for transmitting to the server modules, at startup of the server modules, a configuration condition request including a request for necessary configuration of each of the server modules for the execution of the service; and wherein each of the server modules comprises a

comparison means for comparing configuration of each server module with each server module configuration required for execution of the service, which is transmitted to each server module; and a response means for transmitting response information, which indicates whether requirements specified by the configuration condition request are met, to the storage module in accordance with results of the comparison made by the comparison routine; and wherein the storage module gives, in accordance with the response information, a host name, which is unique to the information processing system, to at least one server module from which the response information is transmitted, assigns a service included in the system configuration information to the at least one server module, transmits data for executing the service included in the system configuration information, and updates the number of server modules to which the service, which is included in the system configuration information, is to be assigned.

Even more, the present invention as recited in claim 18 embodies a server module that is connected via a network to a storage module, which comprises a storage device for storing a service to be executed by a server module and a controller for controlling the storage device, the server module comprising: a startup notification unit for notifying the storage module of server module startup; a reception unit for receiving, from the storage module, a configuration condition request including a request for configuration of the server module that is transmitted at startup of the server module and necessary for the execution of the service for the server module; a comparison unit for comparing the configuration of the server module with a server module configuration required for the execution of the service, which is transmitted to the server module; a response unit for transmitting response information, which indicates whether requirements specified by the configuration condition request are met, to the storage module in accordance with a result of comparison made by the comparison unit; a reception unit for receiving data for service execution by the server module and a host name unique to the information processing system, both the data and the host name being transmitted from the storage module; and a service start unit for starting the service in accordance with the received data.

Even further, the present invention as recited in claim 19 embodies a storage module which is connected to a plurality of server modules via a network and equipped with a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, the storage module comprising: a system configuration information retention unit for retaining system configuration information including information about server module configuration conditions required for execution of the

service and the number of server modules operating the service; and a configuration condition request transmission unit for transmitting, at the time of starting each of the server modules, a configuration condition request including a request for server module configuration required for executing the service for each of the server modules, wherein the storage module provides, in accordance with response information that is transmitted from the server modules to indicate whether requirements specified by the configuration condition request are met, a host name, which is unique to the information processing system, to a server module transmitting response information which indicates the requirements specified by the configuration condition request are met, assigns a service included in the system configuration information to the server module transmitting the response information which indicates the requirements specified by the configuration condition request are met, transmits data for executing the service included in the system configuration information, and updates the number of server modules to which the service, which is included in the system configuration information, is to be assigned.

Finally, the present invention as recited in claim 20 is directed to a method for use in an information processing system in which a plurality of server modules and a storage module, which comprises a storage device for storing a service to be executed by the server modules and a controller for controlling the storage device, are interconnected via a network, the method comprising: sending a notification from the server modules to notify the storage module of server module startup; transmitting from the storage module at the server module startup a configuration condition request including a request for server module configuration required for the execution of the service to the server modules; comparing in the server modules the configuration of each server module with the server module configuration required for execution of each service for the server module, and transmitting, in accordance with results of the comparison, to the storage module response information indicating whether requirements specified by the configuration condition request are met; and providing from the storage module, in accordance with the response information, a host name, which is unique to the information processing system, to a server module transmitting response information which indicates the requirements specified by the configuration condition request are met is transmitted, assigning a service included in the system configuration information to the server module transmitting the response information which indicates the requirements specified by the configuration condition request are met, transmitting data for executing the service, and updating the number of server modules to which the service which is included in the system configuration information is to be assigned.

Among its main features, the present invention relates to an information processing system that comprises a plurality of server modules and a storage module. The storage module has a storage device, in which operating systems and application programs to be executed by the server modules and/or data which is used for execution of the operating systems and/or application programs are stored. The storage module also has system configuration information on services required for configure the information processing system. The system configuration information includes information on type of services to be executed and information on server performance and number of servers required to each services (see for example Figure 6).

Each server module, at a time of power-on or reset, sends configuration information including information on its performance and on resources installed thereto to the storage module. The storage module, in response to the configuration information, selects a service (an operating system and an application program), assigns it to the server that has sent the configuration information, and sends it to the server. Then, each server module starts up the service (the operating system and the application program) sent from the storage module.

According to the above features, a system administrator, for instance, can easily configure an information processing system without paying attention to the performance characteristics of server modules that constitute the information system.

In contrast to the present invention, Albert merely discloses a system and method for forwarding packets between a network and servers. In Albert, forwarding agents and service managers are provided between a network and a group of servers. The service managers send specific instructions to each of the forwarding agents to processing flows of packets.

Applicants will contend that Albert does not disclose or suggest the above-described features of the present invention. Specifically, the Examiner pointed out that Albert discloses a storage module that comprises a system configuration information retention database at col. 13, lines 16-18. However, the fixed affinity database disclosed in Albert is in fact completely different from system configuration information retention database of the present invention. In the fixed affinity database of Albert, fixed affinities that include actions are stored. That is, information stored in the fixed affinity database indicates how flows of packets between clients and servers are handled.

On the other hand, the system configuration information retention database of the present invention stores system configuration information that is information on services required for configure the information processing system. The system configuration information includes information on the type of services to be executed and information on

server performance and the number of servers required for each service. Such features are not taught by Albert at all.

Further, Albert fails to teach or suggest that the storage stores services, that is operating systems and application programs, to be executed by the server modules, and assigns them to the servers in accordance with a result of comparison between system configuration information stored in the server and configuration information sent by the servers. Therefore, the description in column 13, lines 16-21 of Albert fails to show or suggest any structure or operation with any level of specificity of a storage module in accordance with the present invention.

Even more, Albert fails to show or suggest server modules, each of which has configuration transmission unit that transmits configuration information about its own server modules, as in the present invention. Contrary to the Examiners citation of Fig. 2A, items 220-223 and column 6, lines 56-58 of Albert, Albert only mentions communication between servers 220-223 and other items and does not mention the contents of packets transmitted from servers 220-230. Thus, again the description cited by the Examiner fails to show or suggest any structure or operation with any level of specificity of a server module in accordance with the present invention.

Applicant will contend that Albert by itself fails to show or suggest any structure or operation that can render the present invention as claimed obvious to one of skill in the art. To the extent that the Examiner relies on Official Notice to support any rejection, Applicants hereby traverse the Examiner taking Official Notice on the grounds that such notice fails to provide any teaching or suggestion that makes up for the deficiencies in Albert (see MPEP 2144.03). Applicants hereby challenge the Examiner to cite evidence to support his taking of Official Notice, and contend that even if such evidence were available, Albert even in view of Official Notice still fails to show or suggest every feature of the claimed invention. The present invention as claimed is distinguishable and thereby non-obvious over Albert.

The secondary reference of Ashok merely discloses a computer system having logical partitions in which physical resources are dynamically allocated to the logical partitions. Ashok only relates to features that are recited in the dependent claims, and thus fails to provide any teaching or suggestion that makes up for the deficiencies in Albert. Even if these references were combined, such a combination would still fail to show or suggest all the features of the claimed invention as discussed above. Consequently, the claimed invention is distinguishable and thereby non-obvious in view of Albert and Ashok.

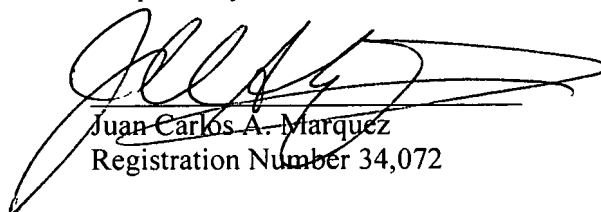
All in all, the present invention as claimed is allowable over the prior art of record as discussed above.

Conclusion

In view of all the above, Applicant respectfully submits that certain clear and distinct differences as discussed exist between the present invention as now claimed and the prior art references upon which the rejections in the Office Action rely. These differences are more than sufficient that the present invention as now claimed would not have been anticipated nor rendered obvious given the prior art. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application as amended is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicant's undersigned representative at the address and phone number indicated below.

Respectfully submitted,



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